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AGRICULTURAL PRODUCTION FOR 1919

WITH SPECIAL REFERENCE TO

CROPS AND LIVE STOCK.

CONTENTS.

WASHINGTON, JANUARY 23, 1919.

CROP AND LIVE-STOCK PRODUCTION IN 1919.

CONTENTS.

It should be distinctly borne in mind, in considering this statement on crop and live-stock production in 1919, that we are dealing with activities the results of which will not appear until the summer or fall of 1919, when conditions may be different from those now prevailing. We are not dealing alone with available food supplies or with present needs. The present world food needs and the available and prospective food supplies, however, have a bearing on the spring planting operations, because we must of necessity consider possible surpluses or shortages. Farmers must also take into consideration the possible course of prices, and they can not reason exclusively from present conditions. One aim in this statement is to lay before the farmers the available facts and appropriate suggestions in order that they may wisely plan their activities. It is highly desirable that nothing be omitted to place agriculture on a sound, permanent, and profitable basis. Many things remain to be done to accomplish this, and further constructive action has been suggested by the Secretary of Agriculture in his annual report for 1918.

During the period of the war in Europe and especially after the entrance by the United States into the conflict, American farmers were urged to increase the production of foodstuffs. With the interruption of farming activities in the European countries and the material reduction in number of ships available to carry food products from distant regions, a large and insistent demand was made upon the United States for food supplies. The response of the farmers of the Nation to this call and their achievements are well described by the Secretary of Agriculture in his recent annual report, dated November 15, 1918, as follows:

ACREAGE.

"The first year of our participation in the war, 1917, witnessed the Nation's record for acreage planted—283,000,000 of the leading cereals, potatoes, tobacco, and cotton, as against 261,000,000 for the preceding year, 251,000,000 for the year prior to the outbreak of the European war, and 248,000,000 for the five-year average, 1910–1914. This is a gain of 22,000,000 over the year preceding our entry into

the war and of 35,000,000 over the five-year average indicated. Even this record was exceeded the second year of the war. There was planted in 1918 for the same crops 289,000,000 acres, an increase over the preceding year of 5,600,000. It is especially noteworthy that, while the acreage planted in wheat in 1917 was slightly less than that for the record year of 1915, it exceeded the five-year average (1910–1914) by 7,000,000; that the acreage planted in 1918 exceeded the previous record by 3,500,000; and that the indications are that the acreage planted during the current fall season will considerably exceed that of any preceding fall planting.

YIELDS.

"In each of the last two years climatic conditions over considerable sections of the Union were adverse—in 1917 especially for wheat and in 1918 for corn. Notwithstanding this fact, the aggregate yield of the leading cereals in each of these years exceeded that of any preceding year in the Nation's history, except 1915. The estimated total for 1917 was 5,796,000,000 bushels and for 1918, 5,638,000,000 bushels, a decrease of approximately 160,000,000 bushels. But the conclusion would be unwarranted that the available supplies for human food or the aggregate nutritive value will be less in 1918 than in 1917. Fortunately the wheat production for the current year—918,-920,000 bushels—is greatly in excess of that for each of the preceding two years, 650,828,000 in 1917 and 636,318,000 in 1916, and is next to the record wheat crop of the Nation. The estimated corn crop, 2,749,000,000 bushels, exceeds the five-year prewar average by 17,-000,000 bushels, is 3.4 per cent above the average in quality, and greatly superior to that of 1917. It has been estimated that of the large crop of last year approximately 900,000,000 bushels were soft. This, of course, was valuable as feed for animals, but less so than corn of normal quality. It should be remembered, in thinking in terms of food nutritional value, that, on the average, only about 12 per cent of the corn crop is annually consumed by human beings and that not more than 26 per cent ever leaves the farm. It should be borne in mind also that the stocks of corn on the farms November 1, 1918, were 118,400,000 bushels, as against less than 35,000,000 bushels in 1917, and 93,340,000 bushels, the average for the preceding five years. It is noteworthy that the quality of each of the four great cereals—barley, wheat, corn, and oats—ranges from 3 to 5.4 per cent above the average.

"Equally striking are the results of efforts to secure an ampler supply of meat and dairy products. In spite of the large exportation of horses and mules the number remaining on farms is estimated to be 26,400,000, compared with 25,400,000 for the year preceding the European war and 24,700,000, the annual average for 1910–1914. The other principal classes of live stock also show an increase in

number—milch cows of 2,600,000, or from 20,700,000 in 1914 to 23,300,000 in 1918; other cattle of 7,600,000, or from 35,900,000 to 43,500,000; and swine of 12,500,000, or from 58,900,000 to 71,400,000. Within the last year, for the first time in many years, there was an increase in the number of sheep—1,300,000, or from 47,616,000 in 1917 to 48,900,000 in 1918.

"In terms of product the results are equally striking. The number of pounds of beef for 1918 is given at 8,500,000,000 pounds, as against 6,079,000,000 for 1914; of pork, at 10,500,000,000, as against 8,769,000,000; and of mutton, at 495,000,000, as against 739,000,000, a total of all these products of 19,495,000,000 for the last year and 15,587,000,000 for the year preceding the European war.

"An increase is estimated in the number of gallons of milk produced of 922,000,000, or from 7,507,000,000 to 8,429,000,000, and in the pounds of wool of 9,729,000, or from 290,192,000 to 299,921,000. The figures for poultry production have not been accurately ascertained, but it is roughly estimated that in 1918 we raised 589,000,000 head, compared with 544,000,000 in 1914, and 522,000,000, the five-year average, 1910–1914, while the number of dozens of eggs increased by 147,000,000, or from 1,774,000,000 in 1914 to 1,921,000,000 in 1918, and in the last year exceeded the five-year average by 226,000,000.

"The following tables may facilitate the examination of these essential facts:

Acreage of crops in the United States.

[Taken from Secretary's Annual Report, dated November 15, 1918.]

[Figures refer to planted acreage.]

Crop.	1918, subject to revision.	1917, subject to revision.	1916	1914	Annual average, 1910-1914.
CEREALS.					
Corn	113,835,000	119,755,000	105,296,000	103,435,000	105,240,000
Wheat	64,659,000	59,015,000	56,810,000	54,661,000	52,452,000
Oats	44,475,000	43,572,000	41,527,000	38,442,000	38,014,000
Barley	9,108,000	8,835,000	7,757,000	7,565,000	7,593,000
Rye	6,119,000	4,480,000	3,474,000	2,733,000	2,562,000
Buckwheat	1,045,000	1,006,000	828,000	792,000	826,000
Rice	1,120,400	964,000	869,000	694,000	733,000
Kafirs	5,114,000	5,153,000	3,944,000	.....	.....
Total	245,475,400	242,810,000	220,505,000	[1] 208,322,000	[1] 207,420,000
VEGETABLES.					
Potatoes	4,113,000	4,390,000	3,565,000	3,711,000	3,686,000
Sweet potatoes	959,000	953,000	774,000	603,000	611,000
Total	5,072,000	5,343,000	4,339,000	4,314,000	4,297,000
Tobacco	1,452,900	1,447,000	1,413,000	1,224,000	1,203,000
Cotton	37,073,000	33,841,000	34,985,000	36,832,000	35,330,000
Grand total	289,073,300	283,441,000	261,242,000	[1] 250,692,000	[1] 248,256,000

[1] Excluding kafirs.

Production in the United States.

[Figures are in round thousands; i. e., 000 omitted.]

Crops.	1918 (unrevised estimate, November, 1918).	1917, subject to revision.	1916	1914	Annual average, 1910–1914.
CEREALS.					
Corn.....bush..	2,749,198	3,159,494	2,566,927	2,672,804	2,732,457
Wheat.....do....	918,920	650,828	636,318	891,017	728,225
Oats.....do....	1,535,297	1,587,286	1,251,837	1,141,060	1,157,961
Barley.....do....	236,505	208,975	182,309	194,953	186,208
Rye.....do....	76,687	60,145	48,862	42,779	37,568
Buckwheat.....do....	18,370	17,460	11,662	16,881	17,022
Rice.....do....	41,918	36,278	40,861	23,649	24,378
Kafirs.....do....	61,182	75,866	53,858	.....	.....
Total.....do....	5,638,077	5,796,332	4,792,634	4,983,143	4,883,819
VEGETABLES.					
Potatoes.....bush..	390,101	442,536	286,953	409,921	360,772
Sweet potatoes.....do....	88,114	87,141	70,955	56,574	57,117
Beans (commercial).....do....	17,802	14,967	10,715	11,585	.....
Onions, fall commercial crop.....do....	13,438	12,309	7,833	(1)	.....
Cabbage (commercial).....tons..	565	475	252	(1)	.....
FRUITS.					
Peaches.....bush..	40,185	45,066	37,505	54,109	43,752
Pears.....do....	10,342	13,281	11,874	12,086	11,184
Apples.....do....	197,360	174,608	204,582	253,200	197,898
Cranberries, 3 States.....bbls..	374	255	471	644	.....
MISCELLANEOUS.					
Flaxseed.....bush..	14,646	8,473	14,296	13,749	18,353
Sugar beets.....tons..	6,549	5,980	6,228	5,585	5,391
Tobacco.....lbs..	1,266,686	1,196,451	1,153,278	1,034,679	991,958
All hay.....tons..	86,254	94,930	110,992	88,686	81,640
Cotton.....bales..	11,818	11,302	11,450	16,135	14,259
Sorghum sirup.....galls..	29,757	34,175	13,068	.....	.....
Peanuts.....bush..	52,617	56,104	35,324	.....	.....
Broom corn, 5 States.....tons..	52	52	39	.....	.....
Clover seed.....bush..	1,248	1,439	1,706	.....	.....

[1] No estimate.

Number of live stock on farms on Jan. 1, 1910–1918.

[Figures are in round thousands; i. e., 000 omitted.]

Kind.	1918	1917	1916	1914	Annual average, 1910–1914.
Horses	21,563	21,210	21,159	20,962	20,430
Mules	4,824	4,723	4,593	4,449	4,346
Milch cows	23,284	22,894	22,108	20,737	20,676
Other cattle	43,546	41,689	39,812	35,855	38,000
Sheep	48,900	47,616	48,625	49,719	51,929
Swine	71,374	67,503	67,766	58,933	61,865

NOTE.—Later revised figures will be found in the Monthly Crop Reporter for crops in December, 1918, and for live stock in February, 1919.

Estimated production of meat, milk, and wool.

[Figures are in round thousands; i. e., 000 omitted.]

Product.	1918	1917	1916	1914	1909
Beef [1] ..... pounds..	8,500,000	7,384,097	6,670,938	6,078,908	8,138,000
Pork [1] ..... do....	10,509,009	8,450,148	10,587,765	8,768,532	8,199,000
Mutton and goat [1] ..... do....	495,000	491,205	633,969	739,401	615,000
Total ..... do....	19,495,000	16,325,360	17,892,672	15,586,841	16,952,000
Milk [2] ..... gallons..	8,429,000	8,288,000	8,003,000	7,507,000	7,466,406
Wool (including pulled wool) ..... pounds..	299,921	281,892	288,490	290,192	289,420
Eggs produced [2] ..... dozens..	1,921,000	1,884,000	1,848,000	1,774,000	[3] 1,591,000
Poultry raised [2] ..... number..	583,000	578,000	567,000	544,000	[3] 488,000

[1] Estimated, for 1914–1917, by the Bureau of Animal Industry. Figures for meat production for 1918 are tentative estimates based upon 1917 production and a comparison of slaughter under Federal inspection for nine months of 1918 with the corresponding nine months in 1917.
[2] Rough estimate.
[3] Annual averages for 1910–1914: Eggs, 1,695,000,000 dozen; poultry, 522,000,000.

EXPORTS OF FARM PRODUCTS IN 1918.

Exports of farm products in 1918 far exceeded in value the exports for any previous year, but this excess value was due partly to abnormally high prices. Exports of cereals and meats were greatly stimulated by the war, but cotton exports fell off sharply, partly because of the blockade of the central powers and partly because of short crops and lack of ocean tonnage. Compared with average annual exports for the five years preceding the war, 1910–1914, and disregarding value, the quantities exported in 1918 showed for corn (including meal) an increase of 1 per cent, for wheat (including flour) an increase of 26 per cent, for oats (including meal) an increase of 1,196 per cent, for barley an increase of 234 per cent. On the other hand, cotton showed a decrease of 47 per cent, tobacco a decrease of 26 per cent, glucose and grape sugar a decrease of 46 per cent, and cottonseed oil cake and meal a decrease of 95 per cent. Exports of animal products in 1918 showed great increases over the prewar average, 171 per cent for beef and its products, 85 per cent for pork and its products, 3,258 per cent for condensed milk, and 1,704 per cent for cheese. For horses, the increase was 202 per cent, and for mules 1,027 per cent.

The shortage of food stocks in Europe, short rations, and disruption of normal manufactures during the war, together with release of ocean tonnage on a peace basis, all point to a continued large export trade in cereals, meats, dairy products, and cotton during the coming year, provided the countries of Europe can finance their purchases.

Exports of domestic produce from the United States, 1918, compared with a prewar average.

Article.	Year ending June 30—		
	Annual average, 1910–1914.	1918	
		Amount.	Per cent of 1910–1914.
CROPS.			
Corn, including meal.....bushels..	48,942,000	49,073,000	101
Wheat, including flour.....do....	104,967,000	132,412,000	126
Oats, including meal.....do....	9,655,000	125,135,000	1,296
Barley.....do....	7,896,000	26,409,000	334
Rye, including flour.....do....	888,000	17,130,000	1,929
Rice, including bran, meal, and polish.....pounds..	31,522,000	196,363,000	623
Cotton (unmanufactured).....running bales..	8,532,000	4,529,000	53
Tobacco.....pounds..	392,287,000	288,782,000	74
Cottonseed oil cake and meal.....do....	933,288,000	44,681,000	5
Glucose and grape sugar.....do....	180,524,000	97,858,000	54
ANIMAL PRODUCTS.			
Beef and its products.....pounds..	221,513,000	600,612,000	271
Pork and its products.....do....	913,025,000	1,692,141,000	185
Condensed milk.....do....	15,774,000	529,750,000	3,358
Cheese.....do....	2,458,000	44,331,000	1,804
Horses.....number..	28,073	84,765	302
Mules.....do....	2,562	28,879	1,127

These figures do not include supplies sent to United States military forces in Europe.

CONDITIONS CHANGE WITH SIGNING OF ARMISTICE.

With the signing of the armistice and the cessation of active fighting, new factors were introduced which affect the food situation. One of these was the step taken to release shipping as rapidly as possible, with the probable result that the agricultural products of the more distant producing countries will again largely appear on the markets of Europe. The channels of trade are being reestablished and food supplies will be sought wherever they can be secured most cheaply.

A provision of the armistice required the immediate evacuation by the Germans of a large area in Belgium, France, Alsace-Lorraine, Luxemburg, and other territory. As a result many millions of people have been added to those that must be aided and fed by the allies, and a material increase in the amount of foodstuffs to be imported has been made necessary. It may be found, too, that Turkey, Austria, and even Germany will have to draw on outside supplies to meet their needs.

The demobilization of the European armies will permit men to return to the farms, and it may be expected that under the stimulus of an urgent demand for food an attempt will be made this year to increase food production in all the affected European countries. The devastated regions will be slow in recovering. Much time and labor will be required to construct necessary homes and farm buildings,

level the ground, remove obstructions, and in other ways prepare for a resumption of regular agricultural activities. But it must be remembered that as compared with the whole of the countries concerned these areas are small and should not affect the results in any large way.

In many sections of Europe there is a shortage of horses and other work stock, farm machinery, seeds, and fertilizers. In these localities a normal production should not be expected, but it is evident that under favorable conditions a material increase over the past year will be secured.

CEREAL REQUIREMENTS FOR 1919.

The following table presents estimates of the cereal requirements for 1919 and shows the world balance as deficit or surplus. Figures for the cereals, except rice, represent millions of bushels.

Import requirements.	Wheat.	Rye.	Barley.	Oats.	Corn.	Rice, hulled.
EUROPE.						*Million pounds.*
Allies	525	25	50	150	220	1,945
Neutrals	124	40	30	38	78	302
	649	65	80	188	298	2,247
Germany	68	.....	149	3	32	438
Austria-Hungary	11	.....	.....	2	15	183
Total Europe	728	65	229	193	345	2,868
Other countries	.....	.....	.....	.....	.....	7,411
Grand total	.....	.....	.....	.....	.....	10,279
Surplus (estimated):						
Canada	100	.....	50	75	.....	.....
Argentina	185	.....	.....	.....	90	.....
Australia	210	.....	.....	.....	.....	.....
India	.....	.....	.....	.....	.....	18,000
Other countries (prewar)	.....	.....	.....	.....	.....	7,400
Total, except United States	495	.....	50	75	90	25,400
Net deficit	233	65	179	118	255	.....?
UNITED STATES, 1918.						
Production	917	89	250	1,538	2,583	1,123
Consumption	640	32	130	1,254	2,730	816
Surplus	277	57	120	284	.....	307
Deficit	.....	.....	.....	.....	147	.....
WORLD.						
Surplus	44	.....	.....	166	.....	14,428
Deficit	.....	8	59	.....	402	.....

NOTE.—Estimates of European crop and live-stock production, consumption, and stocks on hand, surplus or deficiency, are based on incomplete data, which are subject to change as more complete data become available.

The figures on import requirements of the allies and neutrals are those estimated for 1917–18, while the estimated requirements of Germany and Austria are prewar net imports.

The rice surplus might be required in the Orient for countries whose crops may have failed.

MISCELLANEOUS CROP REQUIREMENTS, 1919.

Import requirements of—	Cotton (500-pound bales).	Tobacco (million pounds).	Flaxseed (million bushels).
EUROPE.			
Allies, including Japan	8,058,000	340	21.6
Neutrals	720,000	150	7.9
Germany and Austria-Hungary (prewar boundaries)	2,932,000	355	15.7
Other countries	1,200,000	177	.....
Total requirements	13,010,000	1,022	45.2
SURPLUS (ESTIMATED).			
Countries, except United States, recently reported (1918)	2,680,000	.....	40
Average, 1909–1913, for other surplus countries	500,000	650	[1] 5.7
Total, except United States	3,180,000	650	40
UNITED STATES.			
Production, 1918	11,700,000	1,340	14.7
Consumption	6,600,000	720	26.7
Surplus	5,100,000	620	.....
Deficit	.....	.....	12
WORLD.			
Surplus	.....	148	.....
Deficit	4,730,000	.....	17.2

[1] Russia.

NOTE.—The figures are based on prewar averages, 1909–1913, which may be considerably changed by post-war conditions.

The cotton table is based upon normal industrial conditions in all the consuming countries and upon the restoration of the spinning industry in the devastated regions. If conditions do not reach normal, and if the industry is not restored, the consumption of cotton will be substantially less. With practically complete restoration, cotton consumption may well be expected to equal the normal or prewar times on account of the present shortage of cotton goods in various countries. The economies which the peoples of Europe must practice for some years to come must be considered.

PROSPECTIVE CROP REQUIREMENTS FOR 1919–20.

WHEAT.

The net war import requirements of the European allies and neutrals in 1917–18 were estimated at 649,000,000 bushels. Their 1919 crop of winter wheat was sown on less than normal prewar acreage and under subnormal conditions. Where spring wheat is planted, efforts undoubtedly will be made to increase the acreage.

Now that hostilities have ceased, Germany and Austria will need to import wheat, probably in quantities greater than before the war. Their average net prewar imports were about 79,000,000 bushels.

Total import requirements of Europe appear, therefore, unlikely to exceed 728,000,000 bushels.

The estimated available stocks from surplus wheat countries other than the United States are: Canada, 100,000,000 bushels; Argentina, 185,000,000 bushels; and Australia, 210,000,000 bushels; or a total surplus of 495,000,000.

If all these surpluses were made available for Europe, a probable need for 233,000,000 bushels would appear to be indicated. Russia, which before the war produced an exportable surplus of 162,000,000 bushels, is at present disorganized. It is unlikely that she can furnish wheat for export from her 1918 crop or that she will return to her normal production in 1919.

The United States produced 917,000,000 bushels in 1918, and will probably consume 640,000,000 bushels, leaving a probable surplus of 277,000,000 bushels for export and carry over. If the total surpluses of other countries are exhausted, the United States would be called upon to export only 233,000,000 bushels and would have to carry over into next year a balance of only 44,000,000 bushels. It is possible that this may be somewhat reduced by increased consumption in the United States and Europe which may be expected to follow several years of short rations, especially if bread becomes relatively cheaper than meats and other foods.

For the 1919 crop the farmers in the United States planted last fall more than 49,000,000 acres, which entered the winter in better than average condition. With average abandonment of winter-wheat acreage and a spring-wheat acreage equal to 1918, a yield of approximately 1,000,000,000 bushels may be expected. This would give an exportable surplus of from 350,000,000 to 400,000,000 bushels.

In both 1919 and 1920 the question of price and the ability of European countries to finance the purchase of cereals and meats from the United States will be the decisive limiting factors.

OTHER CEREALS.

Striking a rough balance in the same way as for wheat, it appears that the European countries will need to import, both this year and next, about 65,000,000 bushels of rye, 179,000,000 bushels of barley, 118,000,000 bushels of oats, and 255,000,000 bushels of corn.

The United States can supply from its 1918 crops all the oats required and have a surplus of 166,000,000 bushels, but will lack 8,000,000 bushels of rye, 59,000,000 bushels of barley, and 402,000,000 bushels of corn for domestic consumption and net requirements of Europe which can not be supplied elsewhere. For 1919, therefore, it would seem that the farmers of the United States will be justified in maintaining their acreages of barley, oats, and corn, a large production of all of which is necessary to maintain normal live-stock production.

RICE.

Comparable figures on rice for all countries, compiled by the Bureau of Crop Estimates, from official sources, show average import requirements for 1909–1913 of the European allies and Japan to be 1,945,000,000 pounds of hulled rice, of European neutral countries to be 302,000,000 pounds, of Germany and Austria-Hungary to be 621,000,000 pounds, and of all other countries, excluding the United States, to be 7,411,000,000 pounds. Total import requirements were therefore approximately 10,279,000,000 pounds outside of the United States.

For 1918 India alone is reported to have a surplus of 18,000,000,000 pounds, or 80 per cent more than the average requirements of importing countries. Other producing countries besides the United States normally have a surplus around 7,400,000,000 pounds. The estimated rice crop of the United States for 1918 was 1,123,000,000 pounds, of which 816,000,000 pounds will be needed for domestic consumption, leaving a surplus of 307,000,000 pounds.

If these figures are correct, it would appear that the world may have a surplus of about 15,428,000,000 pounds in excess of import requirements.

FLAXSEED.

The prewar normal requirements of Europe for flaxseed were about 45,200,000 bushels a year. There is an estimated surplus in Canada, India, and Argentina of about 40,000,000 bushels, leaving an apparent deficit of 5,200,000 bushels. The United States production for 1918 is only 14,700,000 bushels, while the normal consumption is nearly 26,700,000 bushels. European and domestic consumption of flaxseed and linseed oil is not expected to return to normal within the year. On the other hand, the Indian crop is not yet made, and no official estimates of its exportable surpluses are yet available. This deficit is due, first, to the omission of Russia from these estimates, that country having an average surplus before the war of 5,700,000 bushels; also to abnormally small surpluses in 1918 in Argentina and India.

Normally, the surplus countries of Argentina, India, Canada, and Russia have nearly 50,000,000 bushels of flaxseed for export, whereas this year, leaving out Russia, we can account for but 40,000,000 bushels. Added to this deficit are the increased import requirements of the United States, due to a reduction in the United States crop. The average production of flaxseed in the United States, 1909–1913, was 19,505,000 bushels, and the crop of 1918 is estimated at only 14,657,000 bushels. It would appear, therefore, that the demand for flaxseed will continue strong.

HAY.

While hay is too bulky for export, it is second in value only to corn. Total hay production in the United States fell from 111,000,000 tons in 1916 to 98,000,000 tons in 1917, and to 90,000,000 tons in 1918, a reduction of about 20 per cent in two years. This was due partly to plowing up meadow lands for other crops, but mainly to unfavorable seasons. If live stock are to be maintained, or increased as seems desirable, it will be necessary to increase the production of hay about 25 per cent. This involves an increase of all leguminous crops.

COTTON.

The average requirements for the five years preceding the war were, for the European allies and Japan, about 8,055,000 bales (500-pound bales); for the European neutrals, about 720,000 bales; for Germany and Austria-Hungary, about 2,932,000 bales; and for other countries, except the United States, about 1,200,000 bales; making a total of 13,010,000 bales required outside the United States.

Our 1918 cotton crop is estimated at 11,700,000 bales, of which 6,600,000 will be required for domestic consumption, leaving about 5,100,000 as an exportable surplus. Other producing countries for which reports are available for 1918 show a surplus of 2,680,000 bales, and countries for which recent figures are not available produced an average annual surplus of about 500,000 bales prior to the war. Apparently total present surplus stocks are about 8,280,000 bales.

For the first five months of the cotton year 1918–19, that is, up to January 4, the total exports of American cotton had been only 1,976,000 bales. Unless there is a very marked increase in exports from this time until the end of the cotton season there will be a considerable carry-over from the crop of 1918. Estimates of the carry-over are about 3,230,000 bales. The apparent deficit as noted elsewhere is 4,730,000 bales, but from this gross amount should be deducted the carry-over at the end of the 1918–19 season. Moreover, the yield in 1918 was greatly decreased by unfavorable weather. The same acreage in 1919, with average weather, will produce at least 2,000,000 bales more than was produced in 1918.

The American farmer will be wise to adjust his cotton acreage so as to have available sufficient land to produce enough food and feed for his family and live stock.

TOBACCO.

No recent figures for tobacco production and consumption in Europe are available. The prewar average net import requirement of the European allies was 340,000,000 pounds, of neutrals 150,000,000

pounds, of Germany and Austria-Hungary 355,000,000 pounds, and of other countries, except the United States, 177,000,000 pounds, making in all a total of 1,022,000,000 pounds of import tobacco. The average surplus of countries other than the United States before the war was about 650,000,000 pounds, leaving a deficit to be supplied by this country of 372,000,000 pounds.

The 1918 tobacco crop of the United States is estimated at 1,340,000,000 pounds, of which 720,000,000 pounds will be required for domestic consumption, leaving a surplus for export of about 620,000,000 pounds. This is 248,000,000 pounds more than would be needed in Europe on a prewar basis. However, it is not known to what extent foreign production and stocks have fallen off during the war, nor the extent to which war conditions may have stimulated consumption in ways likely to continue.

WORLD SUGAR SUPPLY.

The prospective sugar production for the world at the beginning of this season (1918–19) was about 18,750,000 short tons, or about 200,000 less than the annual average for the five years just before the war. The current sugar crop is practically sufficient to meet a prewar world consumption, even if the present stocks did not exist.

But the distribution of the world sugar supply is not normal. There is a shortage of about 50 per cent in the beet-sugar production of Europe, the prospective shortage being about 4,000,000 tons at the beginning of the 1918–19 season, compared with the prewar average; while the cane-sugar output has possibly increased in the same time by approximately 3,800,000 short tons, and the current beet-sugar crop of the United States is 131,000 tons above the prewar average, although it is the smallest crop since 1914.

It appears unlikely that there will be any large increase in the total European production of beet sugar within the next 12 months. Eventually the European production of sugar will undoubtedly exceed that of prewar times, but the destruction of the sugar mills and the disorganization of farm labor will probably tend to keep the European beet-sugar production near its present level in 1919. The indications are that there will be a slight increase in our domestic-sugar production in 1919, especially in the sugar-beet areas.

POTATOES.

Potatoes, like hay, are too bulky for export or import under normal conditions. Consumption, therefore, varies with production. The acreage planted to potatoes is fairly uniform, ranging from 3,565,000 in 1916, the smallest in seven years, to 4,384,000 in 1917, the largest of record, the average from 1912 to 1916 being 3,678,000. In 1918 the acreage was 4,210,000, the second largest, and about 14 per cent more than average. Average yields per acre vary from 81 to 113 bushels, the 1912–1916 average being about 98.4 bushels.

Total production varies more than acreage, depending on weather and diseases. Average production, 1912–1916, was 361,753,000 bushels. The total crop in 1916 was only 286,953,000 bushels, due to smallest acreage and lowest yield in 10 years. Production rose in 1917 to 442,108,000 bushels, or 22 per cent more than average, and was 400,106,000 bushels, equal to 10 per cent more than average in 1918.

In average years about 32 per cent of the crop is shipped from counties where grown, and on January 1 about 42 per cent of the crop remains on hand. On January 1, 1917, following the short crop of 1916, only 32.5 per cent, or 92,805,000 bushels, were reported on hand; on January 1, 1918, following the record crop of 1917, there were reported 204,314,000 bushels, and on January 1, 1919, there were 170,093,000 bushels. Stocks of marketable potatoes in the United States on January 1 of this year are therefore nearly normal, being neither excessively large, as a year ago, nor abnormally small, as two years ago. In the important potato sections of the Northern and Eastern States, stocks on hand were probably slightly less than average; in the Southern and far Western States (particularly Idaho and Washington) stocks appear to be somewhat larger than average, although less than a year ago.

Potatoes form an important and stable item of dietary, and because of variation in yield per acre, depending on weather, diseases, and insects, growers are justified in planting an average acreage. Although small crops of potatoes often sell for more than large crops, growers who plant a fairly uniform acreage year after year are more likely to profit than growers who plunge.

The present and prospective large supply of wheat in the United States this year has an important bearing on the prospective demand for potatoes. Wheat competes with potatoes in the dietary, and an increase in the consumption of wheat will tend to reduce the consumption of potatoes.

PEANUTS.

The demand upon the peanut industry during 1919, with an approach to a normal supply of fats, both animal and vegetable, for the world's needs, is less acute than during 1917 or 1918. While large quantities of peanuts will undoubtedly be consumed by the trade, the prospect for increased demand for peanuts for oil production is not as evident as during 1918. It would obviously be unwise for those who plant peanuts to rely on this one crop. It is believed, therefore, that peanut production should be readjusted to fit into the rotation practice in the territory to which it is especially adapted.

HOME GARDENS.

The need for home production of perishables by means of the garden, it is believed, will continue. Because of the relatively high prices which obtain for practically all foodstuffs, those with sufficient land and spare time should find it profitable to maintain home gardens. Experience shows that very satisfactory returns to the grower, in the form of vegetable products, are obtained when gardening is intelligently and efficiently carried on. The necessity of transporting such products from distant points also is obviated. The department urges those who intend to maintain home gardens to plan to meet the needs of the family rather than to produce crops for sale on the market.

LIVE-STOCK PRODUCTION.

The production of live stock is essential in a permanent, profitable system of agriculture and should be encouraged and increased in many sections of the United States. There has been in recent years a healthy growth in this industry and it is hoped that this may continue. At this time, however, the live-stock program must be considered in the light of available and prospective feed supplies and the demands for the products.

HORSES AND MULES.

The number of horses and mules has shown a fairly uniform rate of increase annually since 1890 to 26,459,000 on January 1, 1919. It may be assumed, therefore, that this rate is sufficient to meet the normal requirements of the country. The war in Europe stimulated the export demand for horses and mules, the number exported increasing from 33,451 in the fiscal year 1913 to 27,659 in 1914, ,to 355,128 in 1915, to 469,468 in 1916; it was 415,463 in 1917, and fell to 113,644 in 1918. The average exports from 1914 to 1918, .inclusive, were therefore 235,786, which was only 1 per cent of the number estimated to be on farms January 1, 1918. These abnormal exports failed to maintain the average farm price of horses and mules prior to the war, indicating a supply in excess of domestic demand. There were on hand with the American Expeditionary Forces, December 25, 1918, a total of 191,631 animals. This total included 26,023 cavalry horses, 109,528 draft horses, 48,614 draft mules, and 7,466 pack and riding mules. The total loss overseas to December 25, 1918, amounted to 42,311 animals, which included 36,189 horses and 6,122 mules. No arrangements have yet been made by any foreign Government for taking over the animals belonging to the United States which are now in Europe.

It appears certain that the abnormal export demand due to the war will not continue. The displacement of horses by trucks in

cities and the prospective increase of trucks and tractors in the country will tend to limit the market. Apparently no material increase in the total number of horses and mules is required, but what is needed is the development of special types of animals best adapted for special purposes. The price of horses in Europe has been much higher than in the United States and until it falls there probably will be a demand for horses from this country.

DAIRY COWS.

All censuses and estimates of numbers of live stock on farms show a consistent and uniform increase in the number of dairy cows. The increase in 1918 was 0.7 per cent and the total number on farms January 1, 1919, was estimated to be 23,467,000. The number of dairy cows per 100 people was 26 in 1890, 23 in 1900, 22 in 1910, and about the same in 1918. Since 1910 population and dairy cows have increased annually 1.8 per cent and 1.6 per cent, respectively. As population continues to grow, the demand for dairy products will increase. Moreover, the abnormal demand for dairy products in Europe, due to the war, is likely to continue for a year or more, and as European peoples have become accustomed to American dairy products there appears to be an opportunity and a tendency to expand over prewar requirements in this direction. For instance, exports of condensed milk rose from 16,000,000 pounds in the fiscal year 1914 to 530,000,000 pounds in 1918.

A normal increase in dairying therefore seems to be fully justified, providing there is the necessary increase in feed crops and the prices for dairy products are sufficient to warrant dairymen in maintaining or increasing their herds.

BEEF CATTLE.

The number of cattle "other than dairy cows" was 54 per 100 people in 1890, 45 in 1900, and 42 in 1910. The low point in production of beef cattle was reached in 1914, when but 35,855,000 were estimated to be on farms. This number increased to 43,546,000 on January 1, 1918, and to 44,399,000 on January 1, 1919.

Exports of beef and beef products fell from 733,000,000 pounds, the high point in the fiscal year 1906, to 151,000,000 pounds in 1914. They rose to 395.000,000 pounds in the fiscal year 1915, and to 601,000,000 pounds in the fiscal year 1918. A most significant change was the decline in exports of fresh beef from 352,000,000 pounds in 1901 to only 6,000,000 pounds in 1914.

A representative of the Food Administration in Europe reports a reduction in the number of beef cattle of 14 per cent in Italy and 17 per cent in France. It seems probable that there has also been some reduction in the beef supply of other belligerent countries of

Europe, although definite figures are lacking. The import demand of Europe for beef products is not likely to be less than for several years prior to the war.

Latest reports show that Australia had 10,459,000 head of cattle in 1916, or 95 per cent of the number on hand in 1914; and Argentina 25,867,000 in 1914.

An increase in the number of beef animals in this country would appear to be justified by our own relative increase in population and probable export demand, but the extent of that increase will depend on the feed supply, on prices, and on other economic conditions.

SWINE.

The number of swine fell from 65,620,000, the high point in 1911, to 58,933,000, the low point in 1914; and under the stimulus of war demand and a record corn crop in 1917 the number increased to 70,978,000 on January 1, 1918. Reports indicate that the number on farms on January 1, 1919, was 75,587,000, or an increase of 6.5 per cent.

The number of swine per capita of population in 1911 was 0.679 of one animal. On the same basis there should be 72,474,000 on farms in 1919.

Exports of pork and pork products fell from 1,678,000,000 pounds in the fiscal year 1899 to 707,000,000 in 1910, and rose to 1,692,000,000 in 1918. Although definite data are lacking, reports indicate a considerable reduction in the number of swine in Europe. A representative of the Food Administration reports a reduction of 25 per cent in the United Kingdom, 12½ per cent in Italy, and 49 per cent in France. However, in estimating probable demand in Europe for American pork products certain factors must be borne in mind, namely (1) large stocks now on hand in the United States, and (2) the rapidity with which the number of swine can be increased in Europe. Another factor of importance is the relatively large proportion of lard in the exports of this country, amounting to about 50 per cent of all pork products exported in the 5-year period from 1910 to 1914, and about 200 per cent more than the total quantity of beef exported. Exports of lard amounted to 481,000,000 pounds in 1914, 476,000,000 pounds in 1915, 427,000,000 pounds in 1916, 445,000,000 pounds in 1917, and 392,000,000 pounds in 1918. All reports emphasize the shortage of fats and oils in Europe at the present time. No shipments to Germany and Austria have been included in the exports of lard from the United States since 1914. However, prior to the war Germany was our second largest customer, taking 146,000,000 pounds in 1914, or about 30 per cent of our total lard exports. The foreign demand for lard is likely to be heavy during the present year.

SHEEP.

Sheep steadily declined in numbers from 53,633,000 in 1911 to 47,616,000 in 1917. The number increased slightly—to 48,603,000—on January 1, 1918, and reports indicate 49,863,000, or a material increase to January 1, 1919. Exports of mutton fell from 6,144,000 pounds in 1903 to 220,000 pounds in 1911, and rose to 5,553,000 in 1916 and 2,098,000 in 1918; and exports of wool rose from 144,000 pounds in 1911 to 8,158,000 in 1915; and fell to 993,000 in 1918, while imports of wool rose from 138,000,000 in 1911 to 535,000,000 in 1916, and 379,000,000 in 1918. Stocks of wool fell from 524,000,000 pounds on September 30, 1917, to 399,000,000 on September 30, 1918. Farm prices of sheep rose from $3.46 per head on January 1, 1912, to $11.82 on January 1, 1918, and $11.61 on January 1, 1919. The domestic situation indicates that a further increase in the number of sheep is desirable.

Sheep in Europe have undoubtedly declined in numbers, but to what extent is not definitely known. A slight reduction in the United Kingdom and about 41 per cent in France is indicated by some reports.

Latest reports available show 76,669,000 sheep in Australia in 1916, or 2.5 per cent less than in 1914; 44,850,000 in Argentina in 1918, or about 4 per cent more than in 1914; and 31,434,000 sheep in South Africa in 1915.

The normal exports of these countries prior to the war were:

	Frozen mutton.	Wool.
	Pounds.	*Pounds.*
Australia	138,000,000	677,000,000
Argentina	152,000,000	328,000,000
South Africa	[1]	165,000,000
New Zealand	231,000,000	195,000,000
Total	521,000,000	1,365,000,000

[1] Very small.

After the war began their exports were limited by lack of ocean tonnage, but with increased shipping facilities and higher prices their exports may be expected to increase.

The cessation of hostilities found supplies of wool in private hands exhausted in the United States, with 399,000,000 pounds owned or controlled by the Government on September 30, 1918. This supply will be turned back into trade channels, and is about 76 per cent of stocks on September 30, 1917. Presumably the same situation exists in Europe, but definite figures are lacking. The 1918 price of wool was greatly stimulated by the war and can not be expected to be maintained.

On the whole, an increase in the number of sheep for both mutton and wool appears to be justified.

Per capita consumption of mutton in 1913 was about 7½ pounds, but has decreased since owing to reduced slaughter. The American people have learned to appreciate the value of mutton, and consumption is likely to increase as soon as the supply is sufficient.

POULTRY.

The actual number of poultry in the United States is not very definitely known, but such evidence as we have indicates the number on farms on January 1, this year, as approximately 325,000,000 head, or a little more than an average of 50 per farm. The last census reported the number on April 15, 1910, as 296,000,000, an average of 53 per farm reporting poultry, or 47 on all farms.

During the past year the number of layers probably increased slightly, partial reports indicating an increase of less than 1 per cent; nonlayers appear to have increased more, probably 10 per cent. About 70 per cent of all poultry on hand January 1 is classed as layers, and 30 per cent nonlayers.

Prices of chickens in the United States on December 15 were 102 per cent higher than the prewar 5-year average (1910–1914), which compares with a like advance of 88 per cent for eggs, 77 per cent for beef cattle, 135 for hogs, and 101 per cent for crops in the aggregate.

Exports of poultry are not reported separately, but in average years are negligible. Exports of eggs increased from 16,000,000 dozen, valued at $3,782,000 (including yolks) in 1914, to nearly 19,000,000 dozen in 1918, valued at $7,693,000 (including yolks, canned eggs, etc).

During the past year the high price of feeds has put commercial poultry and egg production at a special disadvantage in competition with the farm flock, which finds a large part of its food. Farm flocks may safely be increased where a minimum of purchased feed is required for them. At the last census 12 per cent of the farms of the country had no poultry. Many of these could undoubtedly carry some poultry at small cost, and many others carried less than they could profitably.

SUMMARY OF LIVE STOCK.

The foregoing statements regarding present supply, domestic requirements, and probably export demand indicate the wisdom of a live-stock program which will involve (1) maintaining the number of horses and mules without material increase; (2) a normal increase in the number of dairy cows and dairy products; (3) a normal increase in the number of beef cattle; (4) a conservative policy

with respect to increasing number of swine until the relative shortage and high price of feed are overcome; (5) an increase in the number of sheep consistent with facilities for feeding and pasturage and the farmer's knowledge of sheep husbandry and skill in handling them, and with adequate protection from dogs; and (6) an increase in farm flocks of poultry where a minimum of purchased feed is required.

The signing of the armistice at the close of 1918 found the United States with a relatively large supply of food crops and a relatively short supply of feed crops. A live-stock program involving any increase in the number of animals necessarily involves an increase in the production of feed crops.

SEED SUPPLY.

The supply of seed for the leading staple crops is adequate and in general is well distributed. Local shortages due to drouth in parts of the Southwest and in some parts of the Northwest are in the main balanced by surpluses in surrounding sections. As a result of the favorable season for maturing and curing the crop, good germinable seed corn is generally plentiful throughout the corn belt. The only important field crops for which the adequacy of supply is in doubt appear to be red clover and sugar beet.

Both the carry-over and the crop of red clover seed appear to be below normal, while the need for seeding a large acreage of clover in the Middle and Northern States, to restore the rotation balance that has been more or less disturbed by the effort to increase the production of cereals, is greater than for several years past. To make the available supply of clover seed go as far as possible toward meeting the needs, farmers are urged to follow the best methods practicable in seeding and to exercise special care to conserve the clover seed and avoid undue risk of waste of this seed through attempting to secure stands on land unsuitable either in character or condition for this crop. In some cases, alsike clover can with profit be substituted for red clover in whole or in part, especially on lands too wet or too acid for red clover.

While there appears to be a sufficient quantity of sugar-beet seed on hand to plant a normal acreage for 1919, the necessity under existing circumstances for protecting the supply for 1920 is so great that strict economy in the use of the available supplies this year is imperative. One of the essentials to the effective conservation of the sugar-beet seed supply is thorough preparation of the seed bed so that germination may be rapid and uniform. This tends to improve the stand and reduce the necessity for replanting. With thorough preparation of the seed bed, the former seeding rate of 20 pounds of seed to the acre has in many cases been reduced to 10 to 15 pounds

with just as good results from the standpoint of stand, which is the primary factor in producing a satisfactory crop of beets.

Wherever there is any question as to the quantity of grain sorghum and broom-corn seed available, or as to the quality of that which can be obtained, prompt action should be taken. Even where the quantity is abundant, it often happens that drouth has reduced the quality by causing shrunken kernels and low vitality. Germination tests should be made wherever necessary to make sure that the seed will grow when sown.

Flax production was short in 1918, owing chiefly to the severe drouth which obtained throughout the season in eastern Montana and western North Dakota, where a considerable portion of the flax acreage is grown. Seed produced in the section named is more likely to be free from weed seeds and flax diseases than seed grown in the older districts farther east, where seed supplies are more abundant. For these reasons, flax-growing farmers in western North Dakota and in Montana should endeavor to obtain sound, plump seed of adapted wilt-resistant varieties in their own localities, if possible. In the endeavor to provide good seed and to encourage a fairly large acreage of flax, the Department is giving special attention to the locating of good seed supplies in Minnesota, North Dakota, and Montana and to making their location known to those who wish to purchase.

The supply of seed of the staple vegetables, with the possible exception of some varieties of cabbage and cauliflower, appears adequate for the planting requirements.

Probably the most important work in connection with the seed supply for spring sowing in 1919 is the treatment of the seed grain to prevent fungous diseases. Common cereal diseases which can be easily prevented by seed treatment are stinking smut or bunt of wheat, oat smut, covered smut of barley, stem smut of rye, and the stripe disease of barley. All of these diseases are widely distributed throughout the spring-grain area, where they cause serious losses. It is estimated that, in 1918, these five diseases destroyed 25,000,000 bushels of wheat, 110,000,000 bushels of oats, and 5,000,000 bushels of barley. Not only are these diseases widespread, but where no effort is made to control them they become increasingly destructive. For example, it was found that certain wheat fields in Minnesota and North Dakota in 1918 contained as much as 74 per cent of stinking smut. In Nez Perce County, Idaho, one farmer produced 97 per cent of stinking smut and only 3 per cent of wheat in his field, and because of the enormous quantity of smut the little wheat he had was unsalable. These losses might have been saved by seed treatment.

Treatment of seed grain with formaldehyde or with bluestone to prevent the diseases named above is simple, effective, and economical, costing not to exceed 3 cents per acre.

FERTILIZERS.

The figures on fertilizer production are not yet available for the entire year 1918. For the first six months, which is a period comparable with the spring planting season for the current year, the amount produced was approximately 3,500,000 tons of mixed fertilizer and 1,400,000 tons of acid phosphate. Practically all this material was used on the spring crops last year, as there was very little carry-over by the fertilizer manufacturers for the fall trade. These figures compare fairly well with the production in normal years.

The prospects of adequate supplies of fertilizer for use this spring are good. The supplies of nitrogenous materials will probably be ample. There are large stocks of nitrate of soda in the country which were brought in for munition purposes and are now available for agriculture, and in addition the producing capacity of ammonium sulphate plants has been increased from about 200,000 tons in 1913 to approximately 400,000 tons at present.

The Department of Agriculture under the authorization permitting it to purchase $10,000,000 worth of nitrate of soda for distribution to the farmers at cost for cash, has procured a supply of nitrate and is actively preparing to distribute it under much the same plan as that followed last year. The price of this nitrate will be $81 per ton, plus the cost of freight to the farmer's station.

Acid phosphate supplies should be ample to meet all demands, since there is a large surplus of sulphuric acid producing capacity in the country, and our own supplies of phosphate rock are, of course, available to practically any extent demanded.

The indications are that supplies of European potash can not be secured, either from Alsace or from Germany, in time for use this spring.

Since the most satisfactory results are secured from commercial fertilizers when used with a full knowledge of the available plant-food content of the fertilizer and the particular soil and crop requirements, it is suggested that farmers look to their State experiment stations for information on plant food needs of their soils and practical ways to supply these.

LABOR SUPPLY.

"Will a sufficient number of men be returned from the Army, Navy, and war industries to ease the labor situation this coming spring?" is a question prominently before the agricultural people.

The demobilization of men in camps in the United States is proceeding rapidly. It is reported that 800,000 men have already been discharged. The discharge continues at a high rate. It seems as though most of the men in the home camps will be released within the next few months. Many are returning from Europe and their demobilization will proceed. There is reason to believe that a majority of the soldiers who came from the farms will return to agricultural work. A considerable period will necessarily be required to return troops from overseas who may be needed there for occupational purposes for some time.

The manufacture of war materials and equipment is being curtailed, and in many plants stopped. Shipbuilding is proceeding, but with fewer men than were used prior to the signing of the armistice. The work on the building and equipping of cantonments and other war plants has been abandoned. From these lines many thousands of men have been released to return to their former occupations and enter other industries, and surpluses of industrial labor have recently been reported in a number of States. On the other hand, many industrial and manufacturing plants engaged in the production of peacetime products are operating and giving employment to many men. The Government, States, counties, and municipalities are starting projects, such as buildings and roads, for the purpose of utilizing the services of available workers.

In addition to the demand for regular and permanent farm laborers, if weather conditions are favorable, there will be need for considerable emergency help.

Kansas farmers have planted more than 11,000,000 acres of fall wheat. For every man used in seeding this crop two to five men will be required at harvest time. Other States have increased their crops in a large way. Southern States have already made request for 4,000 workers to assist in harvesting truck crops. There will be demands for assistance in connection with such crops as sugar beets, potatoes, fruit, etc. If the emergency requires it, it is hoped that the large support and active assistance given by the people of the cities in the seasons of 1917 and 1918 will be duplicated this year.

The Department of Agriculture and the State agricultural colleges through farm-help specialists and county agents will continue to cooperate with the Department of Labor and State agencies in securing necessary help for farmers.

SOUND AGRICULTURAL PRACTICE.

The acreage of farm crops that farmers will plant in 1919 is, of course, problematical. It is evident that the spirit of patriotism, the guaranteed price for wheat, the agreed price for hogs, and the high prices that were almost assured for other farm products, and

the unusually favorable conditions during the spring for seeding and planting are responsible for the large acreage in 1918. If the weather conditions for planting should be generally unfavorable in the coming spring, there will necessarily be a material reduction in acreage. Moreover, the stability of prices for farm products will be more or less in doubt and will influence to some extent the planting program.

During the war there has been an increase in the population of the United States. This country has issued from the test comparatively untouched and unhampered. By reason of its shorter actual participation in the war and of its freedom from such devastation as has swept Europe its relative position industrially, financially, socially, and governmentally is stronger than it was five years ago. The world does not yet realize how stricken are the European countries and how long it will take them to recover and make their former material contributions to the world's stock.

It is impossible yet for one to frame in his mind a complete picture of the disabilities under which all Europe labors. It has been estimated that the European belligerents, exclusive of the Balkan States and Turkey, lost more than 7 millions of men killed and 14 millions wounded, many of them permanently incapacitated, a total casualty list of over 20 millions. The impairment resulting from these losses and the burden imposed by great numbers of widows and orphans can not be calculated; and the destruction of property, including merchant ships, has been enormous and industry has been disrupted. In Central Europe there has been an immense upheaval in the social, economic, and political field. Years of struggle will ensue before governments are reorganized and orderly political processes are restored. The old régimes will not reappear. For the first time in their lives the masses of the people will have an opportunity to say something about their future and to take part in the direction of the government. They will not be content with the restoration of former conditions and will demand things in the way of political participation, of standards of living, and of wages that will constitute a revolution.

Obviously, also, account must be taken of the enormous debts, the principal of which must be ultimately discharged and the interest paid. It is probable that the war debt of all the belligerents will range from $175,000,000,000 to $200,000,000,000. It is estimated that that of Great Britain will exceed 32 billions, 37 per cent of her estimated real wealth, and $700 per capita; that of France, more than 25 billions, 50 per cent of her wealth, and $600 per capita; that of Germany, 33 billions, 40 per cent of her wealth, and $560 per capita; that of Austria, 18 billions, 76 per cent of her wealth, and $346 per

capita; that of Italy, 7 billions, 30 per cent of her wealth, and $200 per capita; while that of the United States may be 20 billions, only 11 per cent of her wealth, and $200 per capita.

Clearly, there need be no alarm as to the future ability of this country to hold its due place in the trade of the world, and especially as to the ability of agriculture to maintain its position.

The markets of the world are opening up for American products. It is almost assured that a considerable demand from European countries for foodstuffs will continue for one year or more. For these reasons, therefore, it would seem that American farms should maintain as high production as local economic conditions and the application of the principles of sound agricultural practice permit.

In response to the plea for food, many farmers have plowed up permanent pastures and other grass lands that are needed for live stock and planted them to grain crops. Other farmers have broken their regular rotations of crops and, in many cases, have planted grain on the same land year after year. They were aware that this practice meant the destruction of humus, the removal of large amounts of fertility, and a lowering of the productive power of the soil; but they were willing to sacrifice rotation and soil fertility to help furnish food for the Army, the Allies, and the hungry peoples of Europe.

Now that farming is to be restored to a peace-time basis, it would seem that many of the lands needed and suitable for pasture or meadow should be reseeded to grass. Regular and satisfactory rotations of crops should be established, so that fertility may be restored and the productive power of the soils increased and maintained. Live stock should find a place on a larger number of farms, since it will aid in the profitable use of large amounts of roughage, retain fertility on the land, and give employment to labor throughout the year. Especially in many sections of the South diversified farming should be practiced to a larger extent. Many farms and plantations are still devoted entirely to cotton and fail to produce sufficient foodstuffs for the families or feed for the live stock. Such a system is hazardous, since success or failure is dependent upon a single crop, subjected to the influence of the weather, insects, diseases, transportation, and markets. A careful study of the situation has resulted in the recommendation that each farm, each community, and each section of the South should produce, as far as possible, its own food and feed for the sake of economic production and to save transportation costs and intervening profits where the purchase must be made from distant sections. In other words, the food and feed of the South should be produced on the farms of the South.

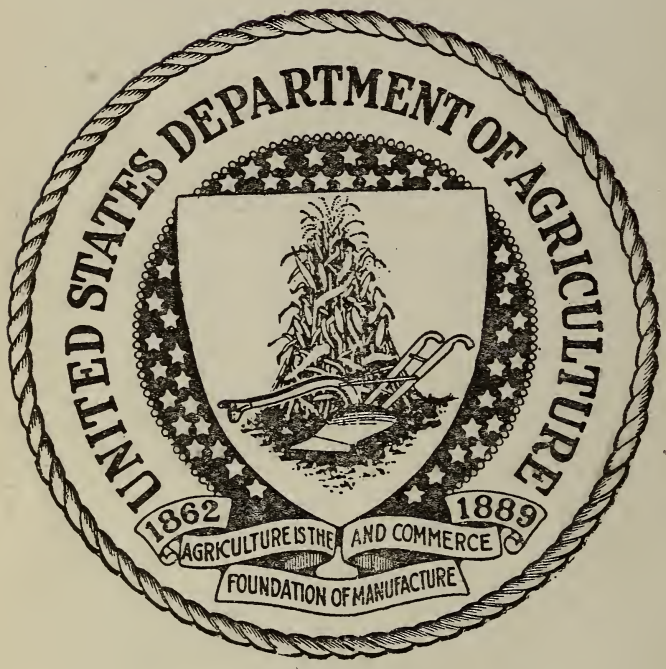
Loss and waste of food produced from preventable plant diseases should be guarded against by the application of well-known control

measures such as seed treatment for cereals and potatoes, spraying potatoes and fruits.

Very heavy losses of perishable fruits and vegetables have occurred in the past during storage, shipment, and marketing, which it will be important to prevent this year by harvesting before exposure to frost, careful handling of the fruits and vegetables to avoid bruising, thorough sorting to remove diseased and injured specimens before decay can spread, and storage under conditions that will prevent the development of storage rots.

Organized efforts should be continued for the prevention and control of diseases of animals such as hog cholera, tuberculosis, contagious abortion, dourine, Texas or tick fever, and others which cause tremendous losses each year. Attention should also be given to the destruction and eradication of predatory animals and rodents.

The Federal Department of Agriculture, in cooperation with the State agricultural colleges, experiment stations, and other State and local agencies, will continue to offer active assistance in these important production, marketing, and other farm problems.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